

Amendment to the Claims:

1. (Currently Amended) An apparatus for segmenting a series of 2D or 3D images obtained from a target object within a patient, comprising:

a transform calculator which calculates a series of transformations, wherein each transformation comprises an operation for defining a best fit between
5 two images of a first series of images, the transformations including: (1) a first transformation of the series of transformations being between a first of the two image[[s]] of the series and a subsequent one of the two images second image of the series and (2) a second transformation between one of the first and second image and a subsequent third image;

10 a segmenter by which ~~a segmentation of~~ segments the first image of the first series is generated;

an image converter which ~~transforms the segmentation with the first transformation and applies the transformed segmentation to said subsequent one of the two images~~ applies the first transformation to the segmentation of the first image to generate a second image segmentation corresponding to the second image and
15 applies the second transformation to one of the first and second image segmentations to generate a third image segmentation corresponding to the third image.

2. (Previously Presented) The apparatus according to claim 1, wherein each transformation relates one of the series of images to an adjacent one of the images of the first series of images.

3. (Previously Presented) The apparatus according to claim 1, wherein the segmentation of the first series of images is applied to a second series of images.

4. (Currently Amended) The apparatus according to claim 3, wherein each of the first and second series of images are each collected from one or
more of means of monitoring selected from a group consisting of:

a magnetic resonance (MR) imaging system, a computer tomography
5 (CT) imaging system, a nuclear medicine (NM) imaging system and an ultrasound
(US) imaging system.

5. (Previously Presented) The apparatus according to claim 3,
wherein the first and second series of images are collected at different times.

6. (Previously Presented) The apparatus according to claim 1,
wherein the images relate to a sphere-like organ and prior to establishing the first
series of transformations, the first series of images is converted to a modified first
series of images showing walls of the organ in a flat plane wherein opposing sides of
5 said plane correspond to an inside and an outside of said organ, and that the said
series of transformations are applied to the modified first series of images.

7-12. (Cancelled)

13. (Previously Presented) The method according to claim 22,
the segmentation of the first series of images is applied to at least a second series of
images.

14. (Currently Amended) The method according to claim 13,
further comprising:

collecting each of the first and second series of images with a different
one of:

5 magnetic resonance (MR) imaging, computer tomography (CT)
imaging, nuclear medicine (NM) imaging and ultrasound (US) imaging.

15. (Previously Presented) The method according to claim 13,
wherein the first and second series of images are collected at different times.

16. (Previously Presented) The method according to claim 22, wherein the images relate to a sphere-like organ, the method further comprising:

prior to establishing the series of transformations, converting the first series of images to a modified first series of images showing the walls of the organ in a flat plane wherein opposing sides of said plane substantially correspond to an inside and an outside of said organ, and wherein the series of transformations are applied to the modified first series of images.

17. (Currently Amended) A method for segmenting a series of 2D or 3D images, the method comprising:

with at least one processor, calculating a transformation between a first image and a second image of the series of images to determine a first transformation of a series of transformations that best fits the first image and the second image;

performing a first segmentation of the first image of the series of images to obtain a first segmented image according to a selected segmentation process;

with the at least one processor, applying the first transformation to the first segmented image to generate a second segmented image corresponding to the second image;

with the at least one processor, calculating a second transformation between the first image and a third image of the series of images which second transformation best fits the first image and the third image with the processor;

with the at least one processor, applying the second transformation to the first segmented image and to generate a third segmented image corresponding to the third image; and

at least one of storing the second and third segmented images in a memory and displaying the second and third segmented images on a monitor.

18. (Cancelled)

19. (Currently Amended) A ~~[[The]]~~ method of ~~claim 17, further~~
for segmenting a series of 2D or 3D images, the method comprising:

5 with one or more processors, calculating a first transformation between
a first image and a second image of the series of images to determine a first
transformation of a series of transformations that best fits the first image and the
second image;

10 with the one or more processors, calculating a ~~[[third]]~~ second
transformation between the second image and a successive third image of the series of
images which ~~third~~ second transformation best fits ~~[[of]]~~ the second image and the
third image;

15 with the one or more processors, performing a first segmentation of the
first image of the series of images to obtain a first segmented image according to a
selected segmentation process;

20 with the one or more processors, applying the first transformation to
the first segmented image to generate a second segmented image corresponding to the
second image;

25 with the one or more processors, applying the ~~third~~ second
transformation to the second segmented image to generate a third segmented image
corresponding to the third image;

30 at least one of storing the segmented images in a memory and
displaying the second segmented images on a display device.

20. (Previously Presented) The method of claim 17, further
comprising:

5 calculating a series of the transformations among the series of images
prior to segmenting the first image,

10 wherein each image of the series of images comprises a wall of an
organ in a flat plane, opposing sides of the wall respectively corresponding to
inside and outside the organ.

21. (Previously Presented) The method of claim 20, further including resampling the series of images.

22. (Currently Amended) A method for segmenting a series of 2D or 3D images obtained from a target object within a patient, the method comprising:

5 with a processor, calculating a series of transformations in relation to a first series of images including at least: (1), ~~each transformation of the series of transformations relating two images of the first series of images to each other, a first transformation of the series of transformations best fitting a first of the images and a subsequent second one of the images and (2) a second transformation of the series of transformation best fitting one of the first and second of the images and a subsequent~~
10 third one of the images;

 performing a segmentation on ~~[[one]]~~ the first image of the first series of images to obtain a first segmented image;

~~with a processor, applying to the segmentation one of the transformations which relates the one image to a subsequent image and applying the transformed segmentation to said subsequent image~~ the first transformation to the
15 segmentation of the first image to generate a second segmentation corresponding to second of the images and applying the second transformation to one of the segmentation of the first image and the second image to generate a third segmentation corresponding to the third image; and

20 at least one of storing the subsequent second and third segmented images in a memory and displaying the subsequent second and third segmented images on a display device.